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*Abandon*

*cc: Carleen*

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/891,576	06/25/2001	Nanping Wu	210030	3311

23460 7590 07/29/2003  
LEYDIG VOIT & MAYER, LTD  
TWO PRUDENTIAL PLAZA, SUITE 4900  
180 NORTH STETSON AVENUE  
CHICAGO, IL 60601-6780

EXAMINER

PATEL, NIHIR B

ART UNIT PAPER NUMBER

3743

DATE MAILED: 07/29/2003

5

Please find below and/or attached an Office communication concerning this application or proceeding.

LEYDIG VOIT & MAYER  
RECEIVED

AUG 04 2003

*Abandoned*  
PAT/TS Date Data

AHF

LAH

<b>Notice of Abandonment</b>	Application No.	Applicant(s)	
	09/891,576	WU, NANPING	
	Examiner	Art Unit	
	Nihir Patel	3743	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

This application is abandoned in view of:

1. ☒ Applicant's failure to timely file a proper reply to the Office letter mailed on July 18<sup>th</sup>, 2002.
  - (a) ☐ A reply was received on \_\_\_\_\_ (with a Certificate of Mailing or Transmission dated \_\_\_\_\_), which is after the expiration of the period for reply (including a total extension of time of \_\_\_\_\_ month(s)) which expired on \_\_\_\_\_.
  - (b) ☐ A proposed reply was received on \_\_\_\_\_, but it does not constitute a proper reply under 37 CFR 1.113 (a) to the final rejection. (A proper reply under 37 CFR 1.113 to a final rejection consists only of: (1) a timely filed amendment which places the application in condition for allowance; (2) a timely filed Notice of Appeal (with appeal fee); or (3) a timely filed Request for Continued Examination (RCE) in compliance with 37 CFR 1.114).
  - (c) ☐ A reply was received on \_\_\_\_\_ but it does not constitute a proper reply, or a bona fide attempt at a proper reply, to the non-final rejection. See 37 CFR 1.85(a) and 1.111. (See explanation in box 7 below).
  - (d) ☒ No reply has been received.

2. ☐ Applicant's failure to timely pay the required issue fee and publication fee, if applicable, within the statutory period of three months from the mailing date of the Notice of Allowance (PTOL-85).
  - (a) ☐ The issue fee and publication fee, if applicable, was received on \_\_\_\_\_ (with a Certificate of Mailing or Transmission dated \_\_\_\_\_), which is after the expiration of the statutory period for payment of the issue fee (and publication fee) set in the Notice of Allowance (PTOL-85).
  - (b) ☐ The submitted fee of \$\_\_\_\_\_ is insufficient. A balance of \$\_\_\_\_\_ is due.  
The issue fee required by 37 CFR 1.18 is \$\_\_\_\_\_. The publication fee, if required by 37 CFR 1.18(d), is \$\_\_\_\_\_.
  - (c) ☐ The issue fee and publication fee, if applicable, has not been received.

3. ☐ Applicant's failure to timely file corrected drawings as required by, and within the three-month period set in, the Notice of Allowability (PTO-37).
  - (a) ☐ Proposed corrected drawings were received on \_\_\_\_\_ (with a Certificate of Mailing or Transmission dated \_\_\_\_\_), which is after the expiration of the period for reply.
  - (b) ☐ No corrected drawings have been received.

4. ☐ The letter of express abandonment which is signed by the attorney or agent of record, the assignee of the entire interest, or all of the applicants.
5. ☐ The letter of express abandonment which is signed by an attorney or agent (acting in a representative capacity under 37 CFR 1.34(a)) upon the filing of a continuing application.
6. ☐ The decision by the Board of Patent Appeals and Interference rendered on \_\_\_\_\_ and because the period for seeking court review of the decision has expired and there are no allowed claims.

7. ☒ The reason(s) below:

ATTACHED IS COPY OF ACTION  
MAILED 7/18/02 TO ADDRESS  
THAT CORRESPONDS TO LISTED  
ADDRESS PROVIDED TO PTO.

Henry Bennett  
Supervisory Patent Examiner  
Group 3700

LEVON, VOT & WAYER  
RECEIVED

APR 04 2003

ATTN: Due Date

Handwritten

Petitions to revive under 37 CFR 1.137(a) or (b), or requests to withdraw the holding of abandonment under 37 CFR 1.181, should be promptly filed to minimize any negative effects on patent term.

U.S. Patent and Trademark Office  
PTO-1432 (Rev. 04-01)

Notice of Abandonment

Part of Paper No. 5

Day : Monday  
Date: 7/28/2003

Time: 09:43:33

**PALM INTRANET****Correspondence Address for 09/891576**

Customer Number	Contact Information	Address
23460	Telephone: (312)616-5600 Fax: No Fax # E-Mail: No E-Mail Address	LEYDIG VOIT & MAYER, LTD TWO PRUDENTIAL PLAZA, SUITE 4900 180 NORTH STETSON AVENUE CHICAGO IL 60601-6780

App Info   Contents   Patent Info   Any Agent Info   Company Data   Foreign

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**DETAILED ACTION*****Claim Rejections - 35 USC § 112***

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-4,6,7,10-16,19,20,23-30,32,33,35-40 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Referring to claim 1, there is insufficient antecedent basis for limitations "the plate body solid volume".

Referring to claims 2,10,11,12,13,14,15, and 30, there is insufficient antecedent basis for limitations "the evaporator".

Referring to claims 3 and 4, there is insufficient antecedent basis for limitations "a plate freezer".

Referring to claim 6, there is insufficient antecedent basis for limitations "the plate body".

Referring to claims 7,20, and 33, there is insufficient antecedent basis for limitations "the serpentine duct" and "the plate body".

Referring to claim 16, there is insufficient antecedent basis for limitations "the compartment" and "the plate body".

Referring to claims 19 and 32, there is insufficient antecedent basis for limitations "the entire plate body" and "the plate body".

Referring to claims 23,24,25,26, and 27, there is insufficient antecedent basis for limitations "the plate" and "the refrigerant".

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Referring to claim 28,35,36,37,38,39, and 40 there is insufficient antecedent basis for limitations "the refrigerant" and "the evaporator".

Referring to claim 29, there is insufficient antecedent basis for limitations "the plate body solid volume" and "the plate body".

*Claim Rejections - 35 USC § 102(e)*

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

(e) the invention was described in-

(1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effect under this subsection of a national application published under section 122(b) only if the international application designating the United States was published under Article 21(2)(a) of such treaty in the English language; or

(2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that a patent shall not be deemed filed in the United States for the purposes of this subsection based on the filing of an international application filed under the treaty defined in section 351(a).

Claims 1,2,5,6, 12, and 15 are rejected under 35 U.S.C. 102(e) as being anticipated by Dienhart et al. U.S. Patent No. 6,357,522. Referring to claim 1, Dienhart discloses a multi-channel flat tube that comprises a longitudinally extending plate body having a first generally planar heat transfer surface; a second generally planar heat transfer surface spaced apart from the first heat transfer surface to define a plate body solid volume (Refer to figures 1 through 3); and at least one longitudinally extending duct passing through the plate body solid volume to channel a refrigerant maintained at a relatively high pressure, the duct having an elliptical cross-section which maintains a stress level in the plate body, caused by the relatively high pressure refrigerant, at a level substantially below the yield strength of the material from which the plate body is constructed (Refer to figures 1 through 3).

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Referring to claim 2, Dienhart clearly shows that the spacing between the first and second heat transfer surfaces and the dimensions of the elliptical duct are such that the von Mises stress is less than the yield strength of the material from which the evaporator is constructed when the refrigerant has a pressure of approximately 1400 psig (Refer to column 4 lines 5 through 12).

Referring to claim 5, Dienhart clearly shows that the duct extends throughout substantially the entire plate body in a serpentine manner (Refer to column 4 lines 1 through 5).

Referring to claim 6, Dienhart clearly shows that the plate body has a length and a width with the length substantially greater than the width and the serpentine duct extends substantially throughout the entire plate body along the length of the body (Refer to figures 1 through 3 and column 4 lines 1 through 5).

Referring to claims 12 and 15, Dienhart clearly shows that the refrigerant passing through the evaporator is carbon dioxide. Refer to the abstract.

***Claim Rejections - 35 USC § 102(b)***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Kato U.S. Patent No. 5,768,782. Referring to claim 1, Kato discloses a flat tube for heat exchanger and method for manufacturing it that comprises a longitudinally extending plate body having a first generally planar heat transfer surface, a second generally planar heat transfer surface spaced apart from the first heat transfer surface, to be define a plate body solid volume (Refer to figure 1); and at least

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one longitudinally extending duct passing through the plate body solid volume to channel a refrigerant maintained at a relatively high pressure, the duct having an elliptical cross-section which maintains a stress level in the plate body, caused by the relatively high pressure refrigerant, at a level substantially below the yield strength of the material from which the plate body is constructed (Refer to figure 1 and column 4 lines 19 through 24).

*Claim Rejections - 35 USC § 103*

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2, 17 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kato U.S. Patent No. 5,768,782 in view of Dienhart et al. U.S. Patent No. 6,357,522.

Kato discloses the applicant's invention as claimed with the exception of stating that the von Mises stress is less than the yield strength of the material from which the evaporator is constructed when the refrigerant has a pressure of approximately 1400 psig.

Dienhart discloses a multi-channel flat tube that does state that the von Mises stress is less than the yield strength of the material from which the evaporator is constructed when the refrigerant has a pressure of approximately 1400 psig. Therefore it would be obvious to modify Kato's invention by stating that the von Mises stress is less than the yield strength of the material from which the evaporator is constructed when the refrigerant has a pressure of approximately 1400 psig so that one knows the limitations of the invention.



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Claims 3 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dienhart et al. U.S. Patent No. 6,357,522 or Kato U.S. Patent No. 5,768,782 in view of Perryment et al. U.S. Patent No. 5,860,471.

Referring to claim 3, Dienhart and Kato discloses the applicant's invention as claimed with the exception of stating that at least one heat transfer surface contacts items to be frozen in a plate freezer.

Perryment discloses a heat exchanger device that does state that at least one heat transfer surface contacts items to be frozen in a plate freezer. Therefore it would be obvious to modify Dienhart's and Kato's invention by stating that at least one heat transfer surface contacts items to be frozen in a plate freezer so that one knows the limitations of the invention.

Referring to claim 4, Dienhart and Kato discloses the applicant's invention as claimed with the exception of stating that both heat transfer surfaces contact items to be frozen in a plate freezer. Therefore it would be obvious to modify Dienhart's and Kato's invention by stating that at least one heat transfer surface contacts items to be frozen in a plate freezer so that one knows the limitations of the invention.

Claims 5,6,18,19,31 and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kato U.S. Patent No. 5,768,782 in view of Matsuo et al. U.S. Patent No. 5,927,102.

Referring to claims 5,18 and 31, Kato discloses the applicant's invention as claimed with the exception providing a duct that extends throughout the entire plate assembly in a serpentine manner.

Matsuo discloses a receiver-integrated condenser for refrigerating system that does provide a duct that extends throughout the entire plate assembly in a serpentine manner.

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Therefore it would be obvious to modify Kato's invention by providing a duct that extends throughout the entire plate assembly in a serpentine manner in order to get a smoother flow.

Referring to claims 6,19 and 32, Kato discloses the applicant's invention as claimed with the exception of providing a serpentine duct that extends substantially throughout the entire plate body along the length of the plate body.

Matsuo discloses a receiver-integrated condenser for refrigerating system that does provide a serpentine duct that extends substantially throughout the entire plate body along the length of the plate body. Therefore it would be obvious to modify Kato's invention by providing a serpentine duct that extends substantially throughout the entire plate body along the length of the plate body to increase the cooling process.

Referring to claims 7,20 and 33, the applicant claims that the serpentine duct makes seven passes through the plate body. It is obvious to one in the ordinary skill of the art that the amount of serpentine duct that pass through the plate body is simply a matter of design choice. The amount of serpentine duct in plate body depends on where the invention is going to be applied.

Referring to claims 8,21 and 29, the applicant claims that the ratio between the total ellipse area to the total cross-sectional freezer-plate area is between about 0.57 and about 0.67. It is obvious to one in the ordinary skill of the art that the ratio between the total ellipse area to the total cross-sectional freezer-plate area is simply a matter of design choice. The ratio between the total ellipse area to the total cross-sectional freezer-plate area depends on where the invention is going to be applied.

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Referring to claims 9,22 and 34, the applicant states that each elliptical duct has a first diameter and a second diameter, wherein the ratio between the first and second diameter is between about 2.0 and about 2.35. It is obvious to one in the ordinary skill of the art that the ratio between the first diameter and second diameter is simply a matter of design choice. The ratio between the first and second diameter depends on where the invention is going to be applied.

Claims 10,12,15,23,25,28,35,37 and 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kato U.S. Patent No. 5,768,782 in view of Johnson et al. U.S. Patent No. 5,320,167.

Kato discloses the applicant's invention with the exception of stating that the refrigerant passing through the evaporator is a CFC-refrigerant or carbon dioxide.

Johnson discloses an air conditioning and refrigeration systems utilizing a cryogen and heat pipes that does state that the refrigerant could be either a CFC-refrigerant or carbon dioxide. Therefore it would be obvious to modify Kato's invention by stating that the refrigerant passing through the evaporator is a CFC-refrigerant or carbon dioxide so that one knows the limitations of the invention.

Claims 11,13,24,26,36 and 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kato U.S. Patent No. 5,768,782 in view of Gilley et al. U.S. Patent No. 5,737,923.

Kato discloses the applicant's invention as claimed with the exception of stating that the refrigerant passing through the evaporator is a non-CFC refrigerant or ammonia.

Gilley discloses a thermoelectric device with evaporating/condensing heat exchanger that does state that the refrigerant passing through the evaporator is a non-CFC refrigerant or ammonia. Therefore it would be obvious to modify Kato's invention by stating that that the

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refrigerant passing through the evaporator is a non-CFC refrigerant or ammonia so that one knows the limitations of the invention.

Claims 14,27 and 39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kato U.S. Patent No. 5,768,782 in view of Dowling U.S. Patent No. 4,235,081.

Kato discloses the applicant's invention as claimed with the exception of stating that the refrigerant passing through the evaporator is at a pressure between about 100 psig and about 300 psig.

Dowling discloses a compressed air dryer that does state that the refrigerant passing through the evaporator is at a pressure between about 100 psig and about 300 psig. Therefore it would be obvious to modify Kato's invention by stating that the refrigerant passing through the evaporator is at a pressure between about 100 psig and about 300 psig so that one knows the limitations of the invention. The pressure of the fluid used in the invention does not have anything to do with the apparatus (evaporator).

Further stated in *Ex parte Masham*, "a recitation with respect to the material intended to be worked upon by a claimed apparatus does not impose any structural limitations upon the claimed apparatus which differentiates it from a prior art apparatus satisfying the structural limitations of that claimed."

Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kato U.S. Patent No. 5,768,782 in view of Seol U.S. Patent No. 6,006,533.

Kato discloses the applicant's invention as claimed with the exception of stating that the temperature within the compartment is less than or equal to 0 degrees Celsius.

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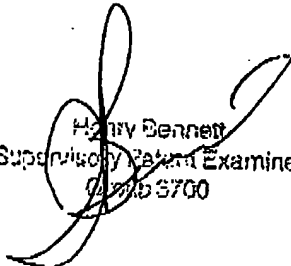
Seol discloses a driving control apparatus of kimchi jar and method thereof that does state that the temperature is less than or equal to 0 degrees Celsius. Therefore it would be obvious to modify Kato's invention by stating that the temperature within the compartment is less than or equal to 0 degrees Celsius so that one knows the limitations of the invention.

*Conclusion*

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communication from the examiner should be directed to Nihir Patel whose telephone number is (703) 306-3463. The examiner can normally be reached on Monday-Friday from 7:30 am to 4:30 pm. If attempts to reach the examiner by telephone are unsuccessful the examiner supervisor Henry Bennett can be reached at (703) 308-0101.

NP  
July 3, 2002

  
Henry Bennett  
Supervisory Patent Examiner  
312 616 5700

**REVISED AMENDMENT PRACTICE: 37 CFR 1.121 CHANGED**  
**COMPLIANCE IS MANDATORY - Effective Date: July 30, 2003**

All amendments filed on or after the effective date noted above must comply with revised 37 CFR 1.121. See Final Rule: **Changes To Implement Electronic Maintenance of Official Patent Application Records** (68 Fed. Reg. 38611 (June 30, 2003)), posted on the Office's website at: <http://www.uspto.gov/web/patents/ifw/> with related information. The amendment practice set forth in revised 37 CFR 1.121, and described below, replaces the voluntary revised amendment format available to applicants since February 2003. **NOTE: STRICT COMPLIANCE WITH THE REVISED 37 CFR 1.121 IS REQUIRED AS OF THE EFFECTIVE DATE (July 30, 2003).** The Office will notify applicants of amendments that are not accepted because they do not comply with revised 37 CFR 1.121 via a Notice of Non-Compliant Amendment. See MPEP 714.03 (Rev. 1. Feb. 2003). The non-compliant section(s) will have to be corrected and the entire corrected section(s) resubmitted within a set period.

***Bold underlined italic font has been used below to highlight the major differences between the revised 37 CFR 1.121 and the voluntary revised amendment format that applicants could use since February, 2003.***

Note: The amendment practice for reissues and reexamination proceedings, except for drawings, has not changed.

**REVISED AMENDMENT PRACTICE**

**I. Begin each section of an amendment document on a separate sheet:**

Each section of an amendment document (e.g., Specification Amendments, Claim Amendments, Drawing Amendments, and Remarks) must begin on a separate sheet. Starting each separate section on a new page will facilitate the process of separately indexing and scanning each section of an amendment document for placement in an image file wrapper.

**II. Two versions of amended part(s) no longer required:**

37 CFR 1.121 has been revised to **no longer require two versions** (a clean version and a marked up version) of each replacement paragraph or section, or amended claim. Note, however, the requirements for a clean version and a marked up version for **substitute specifications** under 37 CFR 1.125 have been retained.

**A) Amendments to the claims:**

Each amendment document that includes a change to an existing claim, cancellation of a claim or submission of a new claim, **must include a complete listing** of all claims in the application. After each claim number in the listing, the status must be indicated in a parenthetical expression, and the **text of each pending claim** (with markings to show **current** changes) must be presented. The claims in the listing will replace all prior claims in the application.

- (1) The current status of all of the claims in the application, including any previously canceled, not entered or withdrawn claims, must be given in a parenthetical expression following the claim number using only one of the following seven status identifiers: (original), (currently amended), (canceled), (withdrawn), (new), **(previously presented) and (not entered)**. The text of all pending claims, **including withdrawn claims**, must be submitted each time any claim is amended. Canceled **and not entered** claims must be indicated by only the claim number and status, without presenting the text of the claims.
- (2) The text of all claims **being currently amended** must be presented in the claim listing with markings to indicate the changes that have been made relative to the immediate prior version. The changes in any amended claim must be shown by underlining (for added matter) or strikethrough (for deleted matter) with 2 exceptions: (1) for **deletion of five characters or fewer, double brackets may be used (e.g., [[error]]**; and (2) **if strikethrough cannot be easily perceived (e.g., deletion of the number "4" or certain punctuation marks), double brackets must be used (e.g., [[4]])**. **As an alternative to using double brackets, however, extra portions of text may be included before and after text being deleted, all in strikethrough, followed by including and underlining the extra text with the desired change (e.g., number 14 as number 14 as)**. An accompanying clean version is not required and should not be presented. Only claims of the status "currently amended," and "withdrawn" that are being amended, may include markings.
- (3) The text of pending claims **not being currently amended, including withdrawn claims**, must be presented in the claim listing in clean version, *i.e.*, without any markings. Any claim text presented in clean version will constitute an assertion that it has not been changed relative to the immediate prior version except to omit markings that may have been present in the immediate prior version of the claims.